TRANSMITTAL

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicant: Michael A. Pouchek	Confirmation No.: 9859
Serial No.: 10/826,416	Examiner: Sarah Elizabeth Suereth
Filed: April 16, 2004	Group Art Unit: 3749
For: MULTI-STAGE BOILER SYSTEM CONTROL METHODS	
Docket No.: H0005553-1161.1133101	Customer No.: 90545

Mail Stop AF
Assistant Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF ELECTRONIC TRANSMISSION

I hereby certify that this paper is being electronically transmitted to the United States Patent and Trademark Office on the date shown below.

Lynn Thompson — December 15, 2010

Lynn Thompson — Date

Applicants submit that the Examiner's rejections contain at least the following clear errors and/or omissions of one or more essential elements needed for a prima facie rejection.

Claims 1, 2, 4-7 and 24-38 were rejected as being unpatentable over Pouchak (U.S. Patent No. 6,536,678) in view of Christiansen (U.S. Patent No. 5,452,687). Neither Pouchak nor Christiansen, alone or in combination, teaches or suggests the elements of the claims, thus the rejection is an error. For example, neither Pouchak nor Christiansen appear to disclose the step of receiving an indication "whether the stage is currently a first stage" of the boiler to be activated. As acknowledged by the Examiner, Pouchak appears to merely receive a signal indicating that a first stage should be activated. Pouchak thus appears to merely receive a signal for heat and then activates one of the boilers. There does not appear to be any determination in Pouchak of whether or not a stage being activated is the first stage or a subsequent stage. Christiansen does not appear to remedy this apparent shortcoming. As acknowledged by the Examiner, Christiansen appears to teach a control system in which the initial firing rate is set by the user, and after a set time period, the firing rate is at a new firing rate. However, Christiansen does not appear to teach any step related to a determination of whether the boiler stage being activated is a first stage, or a subsequent stage, as is required in claim 1. The Examiner asserts in the Advisory Action that the "initial" firing rate in Christiansen is synonymous with the claimed "first" firing rate. This statement suggests the Examiner has misconstrued the claim. The claimed method does not merely involve setting a first (or initial) firing rate and then changing the firing rate to a new or normal firing rate, which appears to be the Examiner's interpretation. The first claimed step involves receiving an indication of (1) a stage of the multi-stage modulating boiler system should be activated and (2) whether the stage is currently a first stage of the boiler to be activated. The second portion of the claimed method step does not appear to be found in either Pouchak or Christiansen, and does not appear to have been considered by the Examiner. Neither reference appears to make any determination of whether the stage being activated is the first stage or a subsequent stage, but instead the references appear to merely provide activation procedures to a boiler regardless of the boiler's status in the multi-stage system. The Examiner has not provided any reference or reasoning for why one of ordinary skill

in the art would have been motivated to modify the references to achieve each and every step in the claimed method.

Further, because neither reference appears to make the determination of whether the stage being activated is currently a first stage, the references cannot be seen to teach subsequent method steps that are based on this initial determination. For example, claim 1 recites, "activating the stage at the normal firing rate if the stage is not the first stage" and "activating the stage at a first firing rate if the stage is the first stage." Without the determination of whether the stage to be activated is currently a first stage, these remaining method steps cannot be properly performed. Because neither Pouchak nor Christiansen appear to teach or suggest the initial determining step, neither reference can be seen to teach or suggest these subsequent steps. The rejection is thus an error.

With regard to features of claim 1 relating to a "period of time," the Examiner stated in the Response to Arguments on page 5 of the Final Office Action:

> 6. Applicant also argued that the limitation of "during a period of time" was not explicitly addressed. In response, the examiner notes that given the teaching of activating a desired firing rate, *it is inherent that the firing rate will continue for a "period of time"*. The examiner notes that *the claims do not require the period of time to be defined in any manner*, or even to be predetermined; merely that the burners operate for a period of time.

(Emphasis added). Applicants submit that while it may be that none of the cited references teach firing a boiler for an unending, infinite time interval, the recitation of "period of time" in multiple places in the claim clearly give meaning to "period of time" beyond an arbitrary time interval. For example, Applicants submit that the clauses "unless a predefined condition... occurs during the period of time" and "activating... after the period of time expires" clearly convey the concept of a period of time of definite duration, as well as relate the "period of time" to other features/events recited in the claim. Accordingly, Applicants maintain their contention that the Examiner has failed to address the step of "activating the stage at the normal firing rate after the period of time expires", and the step of "maintaining the first firing rate for a period of time *unless* a predefined condition that is related to a system temperature occurs during the period of time". These appear to be features that are missing from Pouchak and Christiansen, and thus the rejection would appear to be made in clear error.

With respect to the predefined condition, the Examiner cites to the "emergency mode" 280 of Pouchak as being equivalent. Applicants reiterate that this appears to be insufficient to establish disclosure of the claimed feature. The "emergency mode" 280 of Pouchak is discussed at column 11, line 1 through column 12, line 3:

> Multiple boiler arbitration logic module 102a has a number of additional inputs including system factory test 264, system waterflow 266, manual 268, low gas pressure 270, pump status 272, freeze protection 274, disabled mode 278 and emergency mode 280. For simplicity, only representative inputs are shown. Arbitration logic module 102a responds through a network interface module (not shown) with arbitration encoded signal 282 which is received by network interface module 228 and provided to CCD 104. The functioning of CCD 104 in the multiple boiler implementation is as described under the HIP 100 description for the single boiler embodiment and includes the ability to display status information from a multiple boiler system as well as individual boilers within the multiple boiler system (emphasis added).

It is not seen how this passage can be seen to discloses that the "emergency mode 280" is somehow a predefined condition, and more specifically, a predefined condition that is related to a system temperature, and even more specifically, where Pouchak discloses "maintaining the first firing rate for a period of time unless a predefined condition that is related to a system temperature occurs during the period of time", as recited in claim 1. With regard to this, the Examiner stated in the Response to Arguments section on page 6 of the Final Office Action:

> 7. Applicant also requested clarification as to how Pouchak changes operation due to predetermined conditions. Reviewing Figure 4, inputs of low gas pressure, water flow errors, etc. go to controller (102a), which provides instructions to either begin disabled mode (278) or emergency mode (280) when dangerous conditions occur to vary the stages (via 224). The examiner notes that Pouchak has a common inventor with the current invention.

Applicants' representative has reviewed Figure 4, and notes that Pouchak states in the discussion of Figure 4:

> Multiple boiler arbitration logic module 102a has a number of additional inputs including system factory test 264, system waterflow 266, manual 268, low gas pressure 270, pump status 272, freeze protection 274, disabled mode 278 and emergency mode 280.

(Column 11, lines 1-5.) Given that disabled mode 278 and emergency mode 280 are **inputs** to logic module 102a, as evidenced by the excerpt above and the arrowheads on the functional

block diagram of Figure 4, it is not understood how the logic module 102a can be said to provide instructions to either begin disabled mode 278 or emergency mode 280, as asserted by the Examiner. In any event, Applicants maintain that the Examiner has not established that emergency mode 280 is equivalent to the recited "predetermined condition," and more specifically, "maintaining the first firing rate for a period of time unless a predefined condition that is related to a system temperature occurs during the period of time", as recited in claim 1.

The Examiner acknowledges that Pouchak does not disclose varying the firing rate so that the initial firing rate is lower than the normal firing rate. However, the Examiner states that:

> Christiansen discloses a boiler control system where the initial firing rate (FR) is set by the user (col. 4, lines 4-33), and the initial firing rate continues for a set time period (P91). After the set time period, the firing rate is at a new firing rate (FRold).

Applicants do not understand this assertion, as argued in their response of June 18, 2010, and reiterated here. Column 4, lines 4-33 of Christiansen is dominated by what appears to be a mere listing of parameters, with little to no explanation given as to the significance or meaning of most of the parameters. For example, the Examiner asserts that "P91" is a set time period for which an initial firing rate continues, but in the excerpt above, "P91" is only identified cryptically as "the boiler response interval." Seeking further insight, Applicants' representative searched Christiansen for other occurrences of "P91" that might elucidate its meaning, but found none in either the specification or drawings. Similarly, the phrase "boiler response interval" appears in only one other place: the Summary of the Invention, where it is found unhelpfully amidst a laundry list of "programmable parameter values." Applicants submit that the cited portions of Christiansen cannot fairly be said to teach that "the initial firing rate continues for a set time period (P91)", as asserted by the Examiner. Further in regard to this, the Examiner stated in the Response to Arguments section on page 6 of the Final Office Action:

> 8. Applicant also indicated having difficulty with the meaning of "boiler response interval". In response, the examiner suggests reading column 6, lines 1-17. This passage explains that this is a time period that elapses before the firing rate would be adjusted. This time period is so that the controller does not prematurely adjust the firing rate, leading to an overcorrection (see abstract).

Applicants' representative is unable to comprehend how column 6, lines 1-17 of Christiansen elucidates the meaning of boiler response interval (P91), noting the "boiler response interval"

does not appear in the cited portion, nor does "P91" appear to be found in Figure 3A (to which the cited portion refers), nor any other Figure of Christiansen. If the boiler response interval P91 continues to be relied-upon in rejection of Applicants' claims, Applicants respectfully request that the Examiner/Panel provide a more complete discussion of how the above-cited passage relates to the boiler response interval (P91), recited only at column 4, line 17 and column 2, line 59 of Christiansen. The Examiner further states on page 3 of the Final Office Action that "Christiansen teaches increasing the firing rate after the initial rate is established", citing to column 4, lines 54-56, but in the Response to Arguments section on page 6 of the Final Office Action, appears to acknowledge the correctness of the reasoning advanced by Applicants in their response of June 18, 2010 that Christiansen appears to disclose a number of conditions to be considered that may lead to the firing rate being increased *or reduced*. The Examiner stated:

> 10. Applicant argues Christiansen teaches away from the claimed invention because both increasing or decreasing the later firing rate is taught. However, this is a *clear teaching* that the firing rate should be varied to suit the boiler conditions, and *that increasing or decreasing the firing rate is obvious* to obtain optimal burner performance.

(Emphasis added.) The Examiner appears to agree with Applicants that Christiansen does not teach "wherein the first firing rate is less than the normal firing rate" as recited by claim 1. Claim 1 recites a specific method that includes a combination of specific method steps. Pouchak and Christiansen, taken alone or in combination, clearly do not teach, disclose or suggest the specific method recited in claim 1. The rejection is thus an error. For similar reasons, Applicants submit that Pouchak and Christiansen, taken alone or in combination, do not teach a controller configured to perform the specific steps recited in independent claims 24, 28, 31, 32, and 34, or the specific method steps recited in independent claims 27, 29, and 36, or the claims dependent thereon.

Respectfully Submitted,

Date: December 15, 2010

Brian N. Tufte, Reg. No. 38,638
SEAGER, TUFTE, & WICKHEM, LLC
1221 Nicollet Avenue, Suite 800
Minneapolis, Minnesota 55403-2420
Telephone: (612) 359-9348